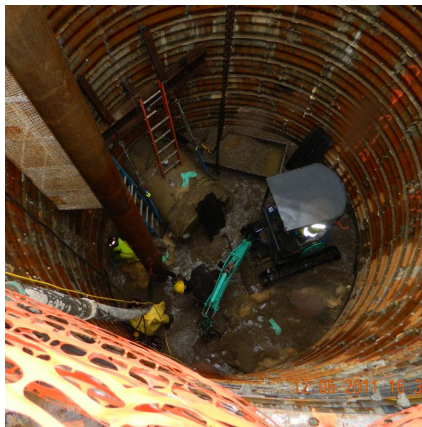


## Castleton Relief Sewer Project-Phase 1 Indianapolis, IN



### PROJECT OVERVIEW AND CHALLENGES

Bradshaw Construction installed 2,740 linear feet of 42 inch reinforced concrete pipe for a relief sanitary sewer by microtunneling through sand with cobbles and boulders below the groundwater table at an average depth of 20 feet. The microtunneling was accomplished in four drives, the longest of which was 810 feet. Six access shafts were constructed using steel ribs and liner plates (16 feet and 20 feet in diameter) and steel sheet piling (16 feet and 20 feet square). Six precast concrete manholes were installed up to 96 inch in diameter.



### PROJECT INFORMATION - 504

#### OWNER:

Citizens Energy Group  
(Formerly Consolidated City of Indianapolis, DPW)  
Sandra Shafer  
(317) 327-4546  
sshaffer@citizensenergygroup.com

#### ENGINEER:

Black and Veatch, Inc.  
James McKelvey  
(317) 570-8331

#### CONTRACTOR:

Bradshaw Construction Corporation

#### CONTRACT VALUE:

\$5,988,200

#### COMPLETION DATE:

6/30/2012

#### GEOLOGY:

Sand, Gravel, Boulders, Glacial Till

#### EXCAVATION METHOD:

Clam Bucket

#### MINING DIMENSIONS:

16' x 20' Ø & 16' x 20' square

#### FINAL LINING:

N/A

#### FOR MORE INFORMATION:

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(410) 970-8300  
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Refer to Project 504